

# Multisensory processing in full-body illusions

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Propositions accompanying the dissertation  
**MULTISENSORY PROCESSING IN FULL-BODY ILLUSIONS**  
*Antonella Maselli*

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1. Our own-bodies are unique objects of perception, in at least two respects. First, sensations from our bodies cannot be switched off at will. Second, the multisensory dimension of the own-body percept exceeds by far other forms of perceptual experiences.
2. Experimentally induced bodily illusions are powerful tools to study the otherwise elusive neural and cognitive mechanisms underlying self-body perception and corporeal awareness.
3. While intrinsically interlaced in the healthy perception of our physical bodies, the sense of *body ownership* and the sense of *self-location* can be dissociated during full body illusions, similarly to what happens in transient out-of-body experiences of neurological origin.
4. Once established, body ownership illusions have the power of relaxing spatial and temporal constraints for multisensory integration of bodily stimuli.
5. The illusion of owning a body that is different from one's own – in terms of age, race, sex and other semantic attributes – can have profound attitudinal and cognitive implications with great potential for therapy and rehabilitation.
6. *“The key to understanding perception is appreciating the distinction between it and reality. We do not perceive the world as it is. The brain constructs a simulated world for us, a fake world, a world of enhanced borders and contrasts, a colorized world, a world populated by invented attributes. We experience a banquet of need-to-know information”* – **Michael Graziano**
7. We know that there exist in the brain specialized areas for the perception of human bodies. The same does not hold for the own-body percept. Current evidence points to a shared distributed processing from which a dynamic and flexible representation emerges.
8. The ability to make predictions is key to a smooth interaction with the environment, as actions need to be planned in advance for compensating the intrinsic latencies of our nervous system. Our brains need therefore to adaptively model the behaviour of inanimate objects and living creatures.
9. *“Reality is merely an illusion, albeit a very persistent one”* – **Albert Einstein**
10. *“We can judge our progress by the courage of our questions and the depth of our answers, our willingness to embrace what is true rather than what feels good”* – **Carl Sagan**
11. *“Real learning comes about when the competitive spirit has ceased”* – **Jiddu Krishnamurti**